North American Aerospace Surveillance Council (NAASC)

&

Inter-agency Homeland Air Security (IHAS)

Foundations for the Future

Tim Wallace, HQ FAA ARN-100
ASWG Co-Lead

NAASC & IHAS Interagency Participants

Dept of Justice

FBI

Secret Service

FAA

Customs Service

National Nuclear Security Administration

JFCOM

Air National Guard

USN

TSA

Joint Staff

CIA

DIA

USA

NORAD

USAF

USCG

USMC

Agriculture

Major challenge requiring bi-national & interagency solutions

NAASC Background

- Several challenges to NORAD surveillance infrastructure dictated closer cooperation with civilian agencies
  - Government reallocation of military frequency spectrum in both the US and Canada affected surveillance capabilities
  - Federal Aviation Administration's (FAA) proposed deactivation of all CONUS long-range radars
  - Shutdown of Gulf Coast Tethered Aerostat Radar System (TARS) sites
  - Rising costs of maintaining surveillance infrastructure in the face of declining budgets
- **NAASC formed in Oct 2000 to address these issues**

NAASC Background

ORIGINAL GOALS

- Identify a common requirements set for US/CA users of the North American air surveillance network
- Design an air surveillance architecture that will provide the required services for both governments
- Develop a funding strategy that leverages the synergism of bi-national & inter-agency partnerships
- Improve interoperability between military and civilian users of the air surveillance network
- Define and defend the RF spectrum requirements of the North American air surveillance network

NAASC Background (cont)

Post 9/11 Role of the NAASC

- Funding advocacy
- Executive oversight for implementation of the North American Air Surveillance Plan (NAASP)
- Continued refinement of air surveillance requirements
- Coordination forum for operational and policy issue

The NAASC, as a bi-national, interagency coordinating body, makes sense and is "good government", even in the absence of a formal structure

NAASC Results/Decisions

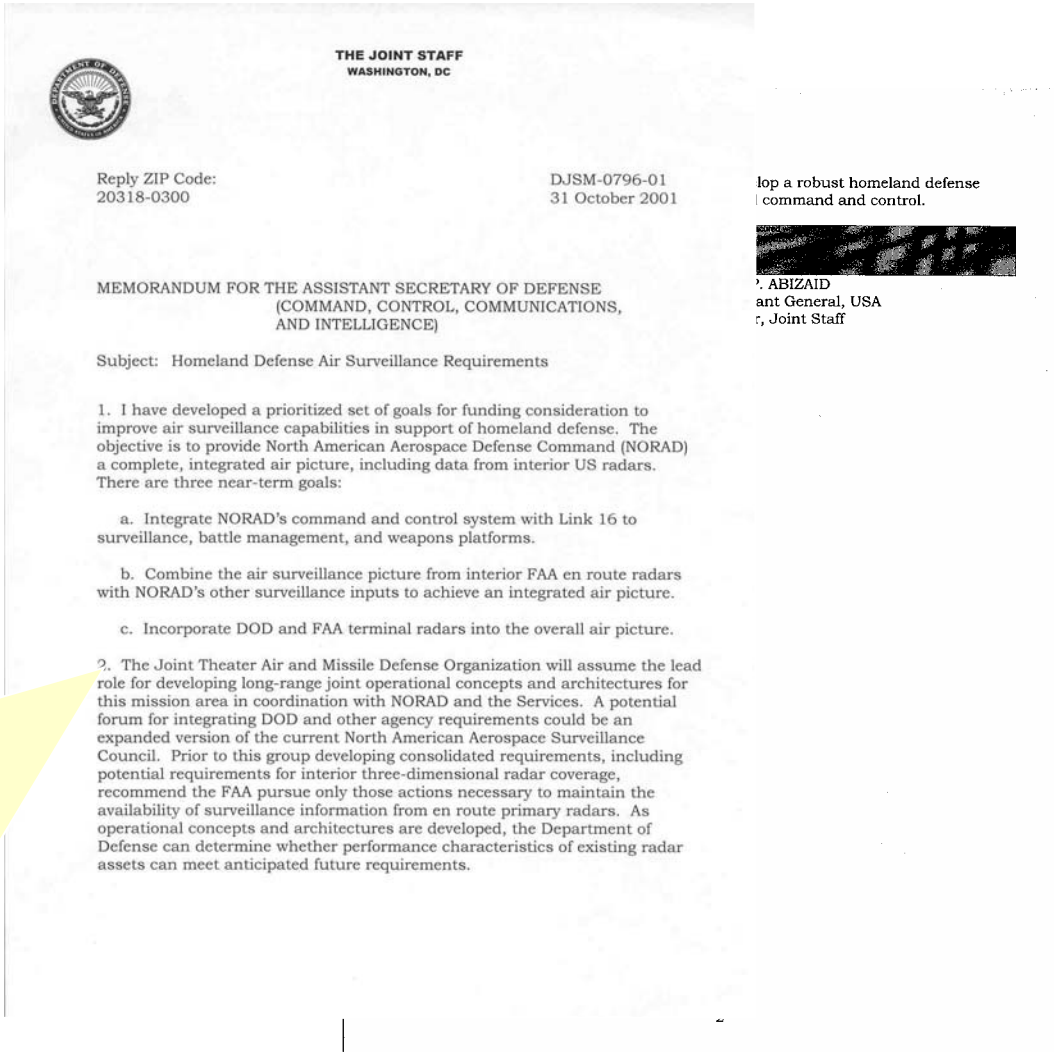
- **{R} North American Air Surveillance Plan (NAASP)**
  - GOAL - Common Air Surveillance Picture (CASP)
    - *Addresses three areas of Surveillance: SENSORS, TELECOMMUNCAITONS, AUTOMATION.*
    - *Sets an North American/US inter-agency Surveillance requirement for North America*

      {0ft (AGL) – 100,000ft (MSL) surveillance coverage}
    - *Identifies need for a surveillance data sharing network*
- **{D} NAASP Surveillance Requirement can not be viably met by existing ground based technology**
- **{R} DoD is funded for advanced new Surveillance technology R&D**
  - High Altitude Airship (HAA) ACTD {$30M FY03-06}
  - HAA sensor development {$26M FY03-06}
  - Multi-Static Passive Sensor {$39.5M FY03-06}
  - National Capital Region (NCR) Demo {$27.9M FY03-06}
- **{D} Existing infrastructure needs to be sustained until advanced technology can be implemented**

IHAS

DJS HAS Tasking

"JTAMDO will assume the lead role for developing long-range joint operational concepts and architectures for this mission area in coordination with NORAD and the Services."



THE JOINT STAFF
WASHINGTON, DC

Reply ZIP Code:
20318-0300

DJSM-0796-01
31 October 2001

lop a robust homeland defense
command and control.

[redacted]

. ABIZAID
ant General, USA
r, Joint Staff

MEMORANDUM FOR THE ASSISTANT SECRETARY OF DEFENSE
(COMMAND, CONTROL, COMMUNICATIONS,
AND INTELLIGENCE)

Subject: Homeland Defense Air Surveillance Requirements

1. I have developed a prioritized set of goals for funding consideration to improve air surveillance capabilities in support of homeland defense. The objective is to provide North American Aerospace Defense Command (NORAD) a complete, integrated air picture, including data from interior US radars. There are three near-term goals:

a. Integrate NORAD's command and control system with Link 16 to surveillance, battle management, and weapons platforms.

b. Combine the air surveillance picture from interior FAA en route radars with NORAD's other surveillance inputs to achieve an integrated air picture.

c. Incorporate DOD and FAA terminal radars into the overall air picture.

2. The Joint Theater Air and Missile Defense Organization will assume the lead role for developing long-range joint operational concepts and architectures for this mission area in coordination with NORAD and the Services. A potential forum for integrating DOD and other agency requirements could be an expanded version of the current North American Aerospace Surveillance Council. Prior to this group developing consolidated requirements, including potential requirements for interior three-dimensional radar coverage, recommend the FAA pursue only those actions necessary to maintain the availability of surveillance information from en route primary radars. As operational concepts and architectures are developed, the Department of Defense can determine whether performance characteristics of existing radar assets can meet anticipated future requirements.

Assessment and Warning

Interagency Cooperation

Key Enablers to Maximize Interagency Cooperation & Coordination Necessary for Timely Assessment and Warning

Key Elements

- Focused Intelligence / Direct Intelligence Actions Against a Specific Threat / Group
- Increased or Focused Air Surveillance
- Tracking, Identification & Determination of Intent
- Heightened Alert for local, State and Federal Agencies
- Execution of Pre-planned or Other Appropriate Courses of Action
- Passive Defense Measures Implemented - Positioning of Disaster Response Teams & Equipment

Confirmation:

Examples:

- Where Money Transferred
- Incomplete Pilot Training
- Why Course Deviation
- Why Change in Altitude
- Why No IFF
- Why No Voice

Goals / Benefits

- Determination of Threat / Hostile Act
- Confirmation of Intent
- Identification, Alert, and Positioning of Response Forces
- Timely Warning

HAS Execution

- Notification and Situational Awareness to the Executive Level of Government

National Executive Coordination Centers

- Leads Development of Interagency Air Security Objectives and Plans
- Focal Point for Interagency Intelligence
- **Assesses** Trigger Events
- **Declares** Events
- **Coordinates** Vertically and Horizontally
- **Synchronizes** Execution of Interagency Homeland Air Security Mission

Homeland Air Security Coordination Center

Agency Representatives

Synchronizes Interagency Execution

Homeland Air Security Event

Daily HAS Support

Event Specific Support

- Execute Core Missions
- Develop Air Security Supporting Plans
- Execute Homeland Air Security Mission

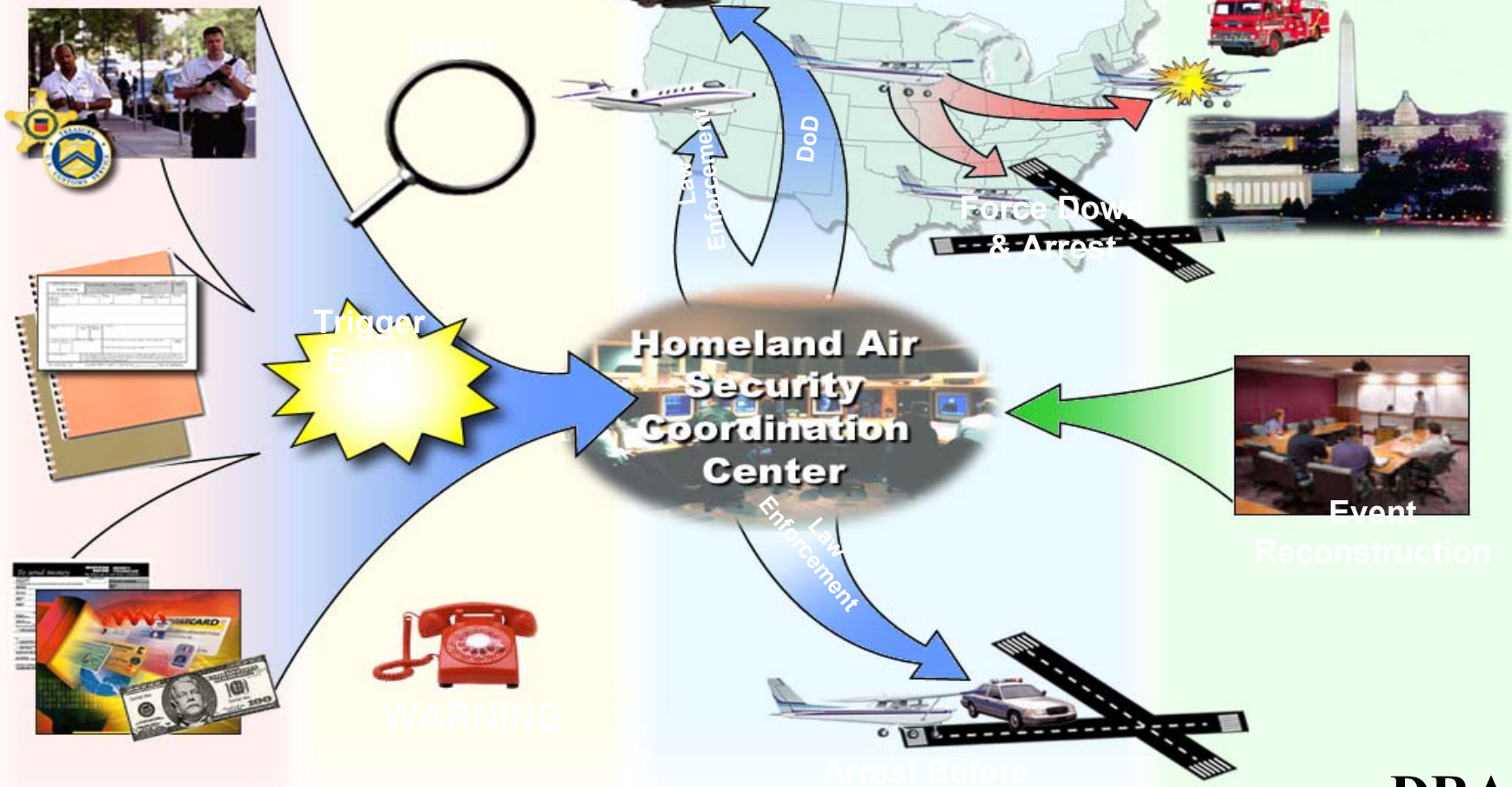
Agency

Agency

Agency

Homeland Air Security

RECOGNITION **ASSESSMENT** **INTERDICTION** **RECOVERY**



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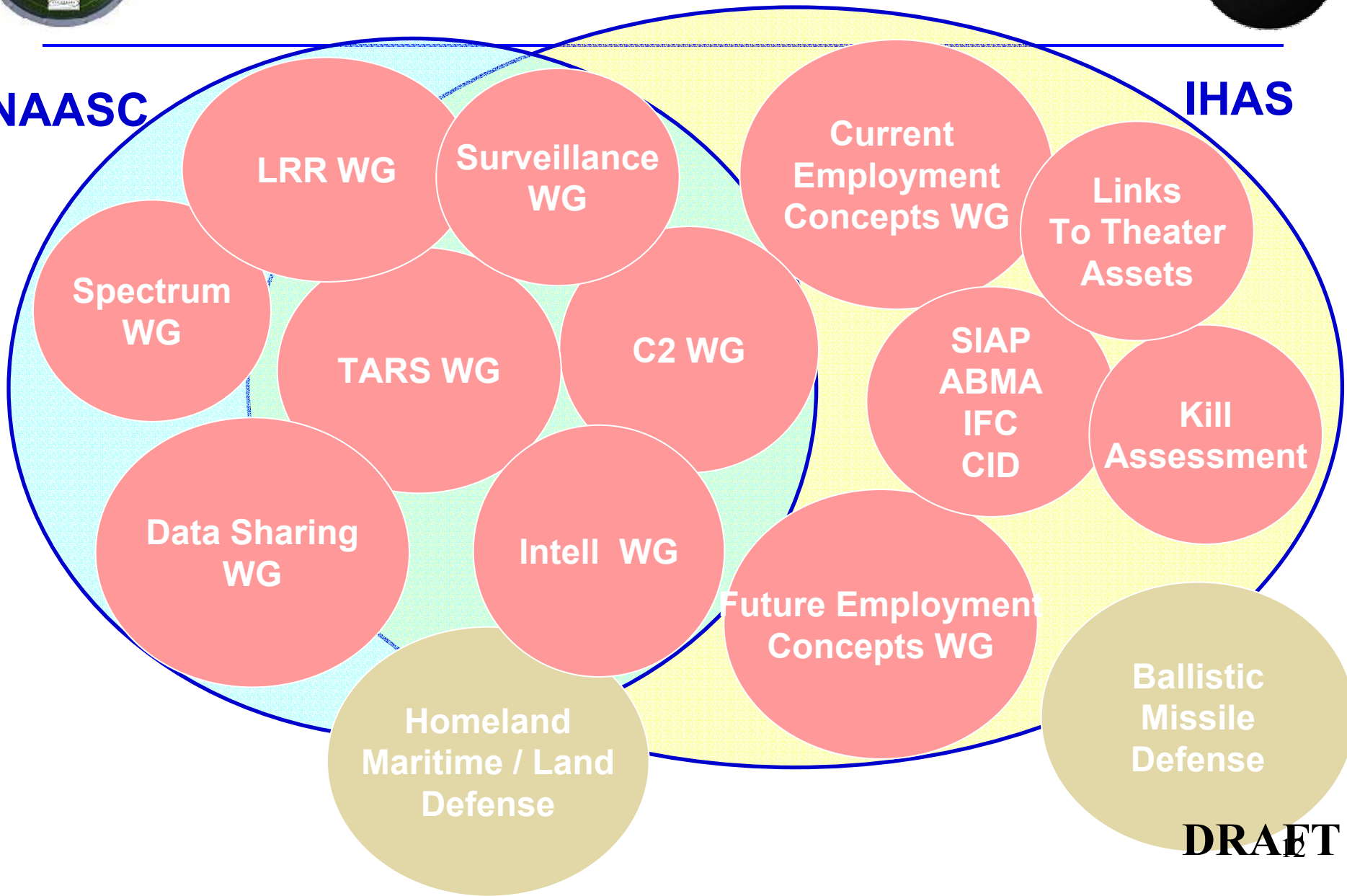
NAASC / IHAS Interrelationship



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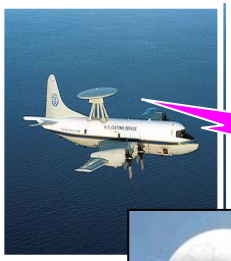
SDN

Air Traffic Surveillance Needs

- "At a given point in space the controller should have available all existing surveillance information such as long range radar, airport surveillance radar, automatic dependence Surveillance – B, etc."
- "by virtue of our stewardship of the airspace, involve a role for FAA operational components in support of another agency's primary mission.
- "To have complete, integrated NAS surveillance, there is also a need for an enhanced surveillance information distribution system."

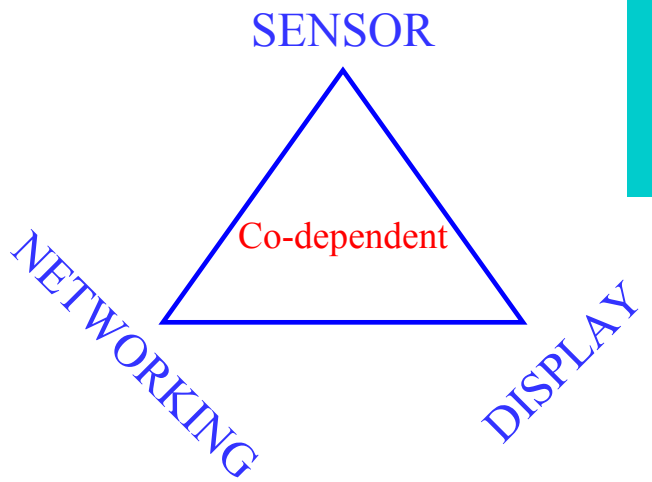
CASP-Surveillance in a nutshell



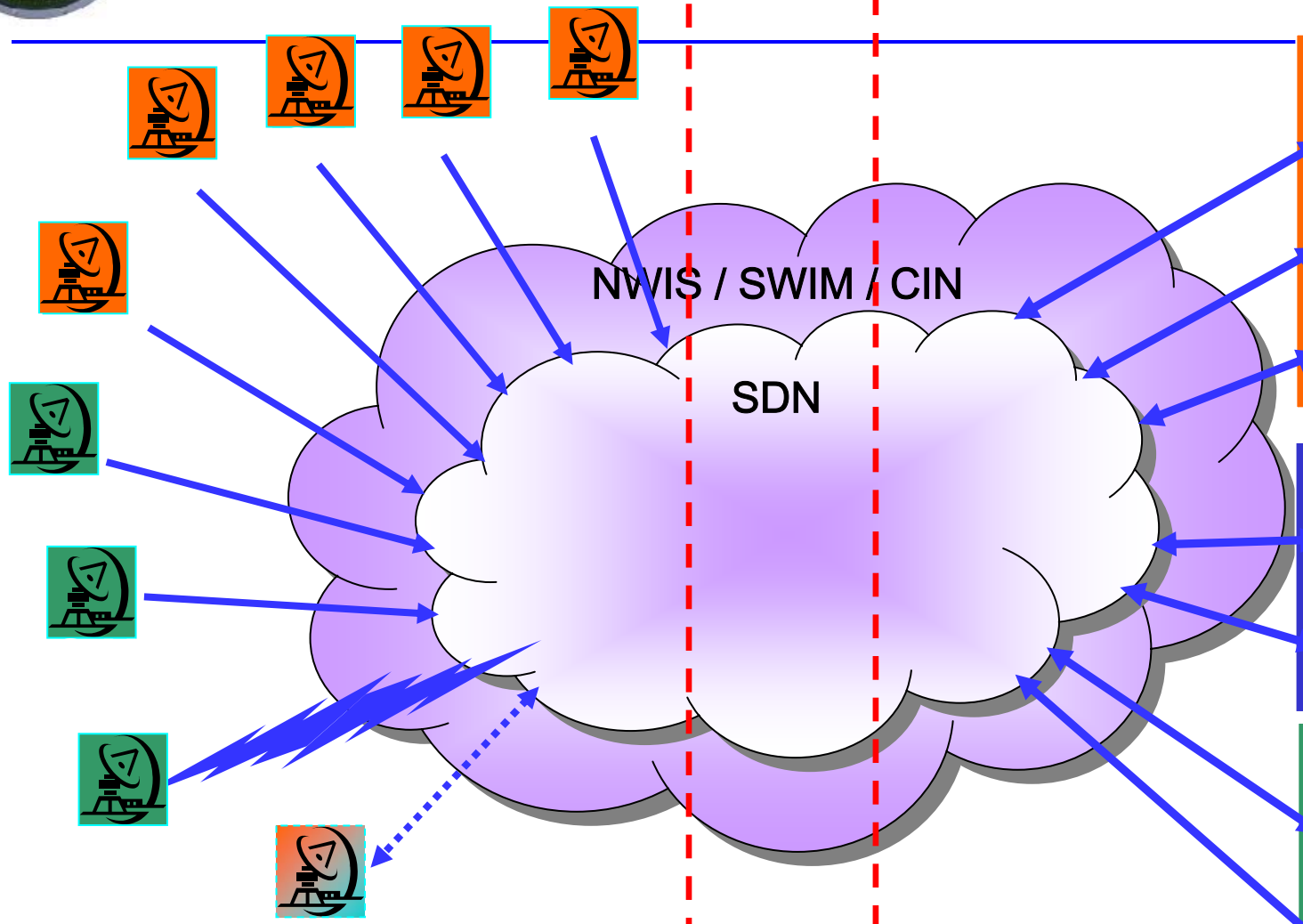
Telecommunications NETWORK

Surveillance Coverage

Display a Common Air Space Picture (CASP)



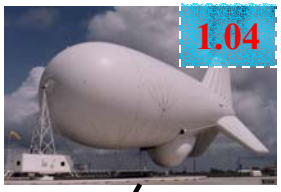
SDN Systems View

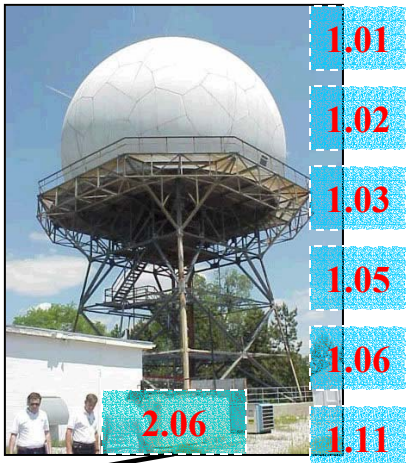


SDN

Surveillance Data Network

Qty 235 SRR





Qty 128 LRR

SNOC
(network access & control)
2.04
2.07

Surveillance
Archive Service

SDN
2.05

Each Facility has redundant
H/S connections to SDN

FAA
2.06
Qty 197
2.08

IACC
2.04
NCRCC/HASCC
2.05
2.06

NORAD
2.06
2.11
2.08

AMICC
2.06
2.14
2.08

SDN

Surveillance Data Network

- The SDN is the vehicle to provide the Common Air Surveillance Picture (CASP) which is one of the Key Enablers in the IHAS Ops Concept

- The Surveillance Data Network (SDN)
  - Enables seamless integration of surveillance data from multiple sensors
  - Provide any user connected to the network direct access to any sensor data stream on the network
  - Enables any air traffic facility to access another facilities' sensor data and provide an emergency backup capability for their airspace.

SDN Objectives

- Harness Existing Ground-based Surveillance Infrastructure
  - Build an IP based network via FTI.
  - Encapsulate existing surveillance data sets (cooperative/non-cooperative) into IP packets.
  - Establish SNOC to oversee SDN operation
- Build a Common Surveillance Data Protocol
  - Common (Track names, coordinate system, timing system, etc).
  - Integrate other sensors (TADIL, DoD tactical radars, TARS, etc).
- Enhance Automation Systems
  - Harness existing automation programs to utilize SDN data.
  - Harness existing Automation programs (ECG, ERAM, STARS) to build a "FUSED" CASP from the SDN data.
  - Build inter-agency automation capabilities (ie. Common track names, "flagging/hand-off" ability).

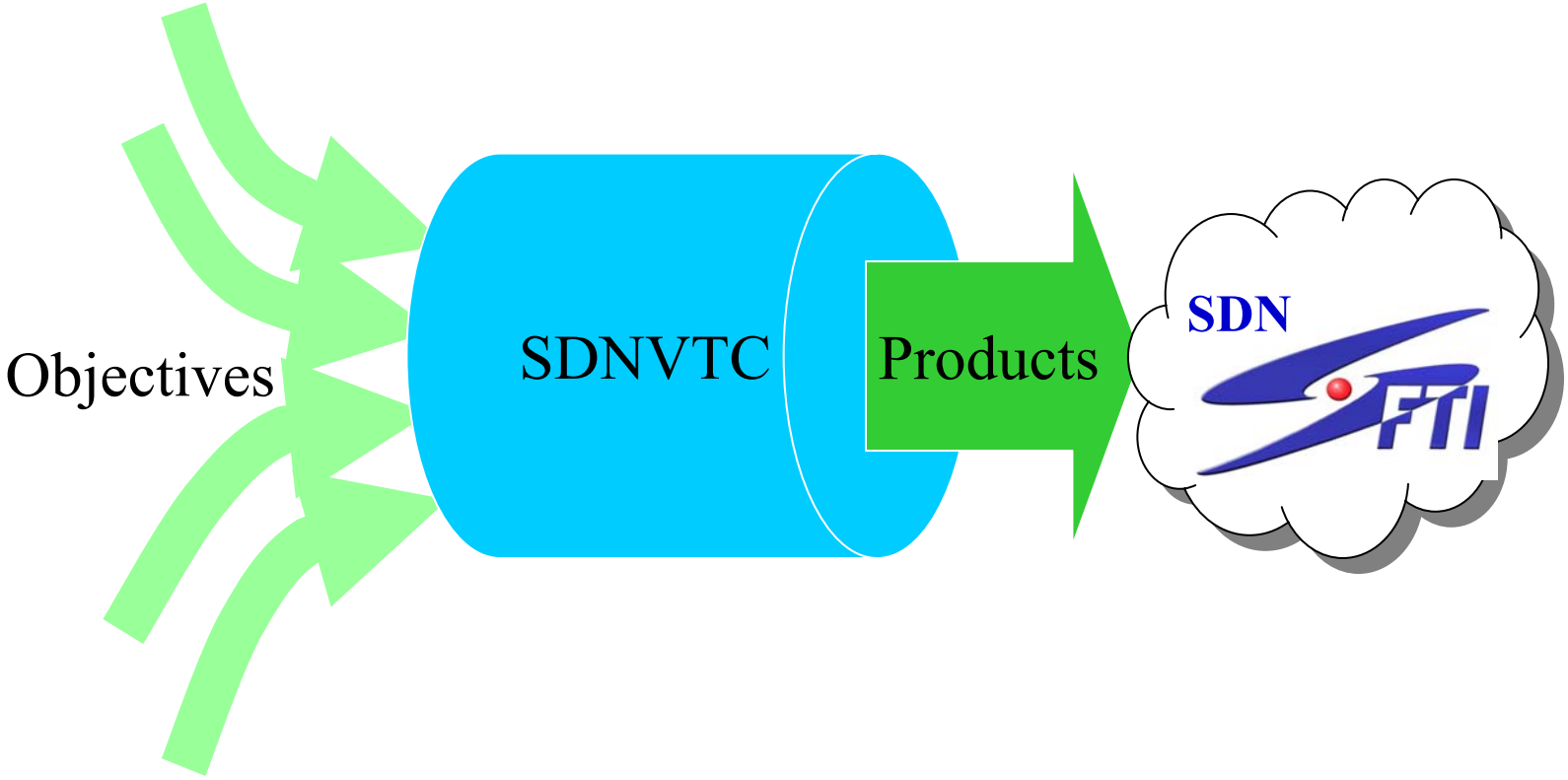
SDN Objectives

Continued

- **Surveillance Archival Service**
  - Build a capability within SDN to archive surveillance data and/or Automation CASP data. (expansion of the SNOC capabilities)
- **Surveillance Performance Toolset**
  - Build a system/tool able to analyze multiple sensor coverage for a given airspace.
  - Will enable integration and transition of new sensor technology into the NAS.
- **Investigate SDN or network "fused" data (pre-automation)**

SDN - The way ahead

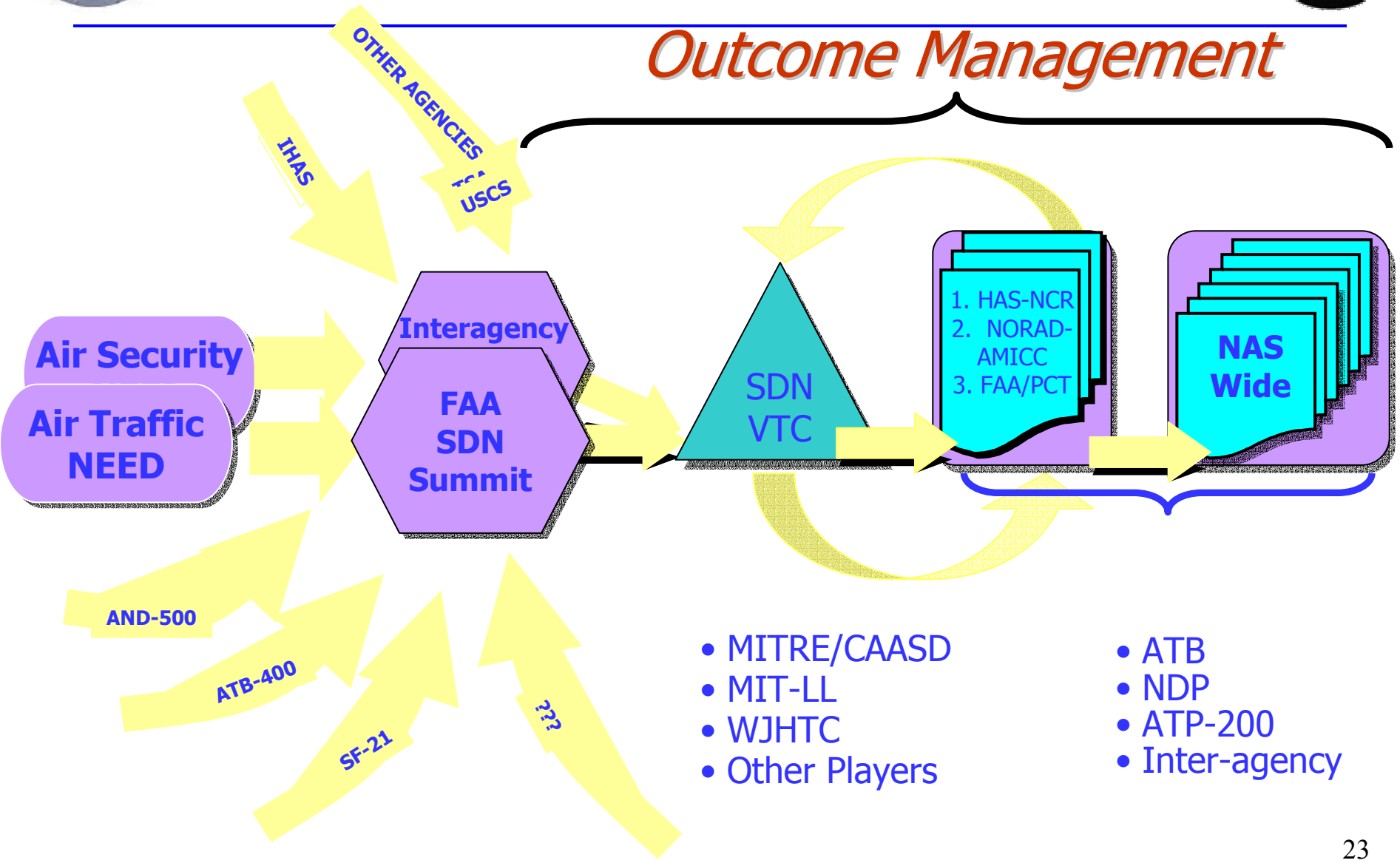
- Establish SDNVTC
  - Work SDN objectives at SDNVTC
  - Harness FTI as IP backbone



SDN - The way ahead

- Establish SDNVTC
  - Work SDN objectives at SDNVTC
  - Harness FTI as IP backbone
- Support the NCRCC/NORAD/AMICC with NCR area SDN
- Grow SDN throughout NAS
  - Increase interagency users on SDN
  - Roll FAA air traffic operations onto SDN
- Evolve CASP/Surveillance via the SDNVTC

SDN Way Ahead



SDN Outcomes

- Air Traffic
  - Enable Seamless Surveillance (*Potential "Terminalization" of airspace)*
  - Reduce boundary crossing/stitching errors
  - Improve conformance monitoring through earlier detection of aircraft state changes
- Airway Facilities
  - Reduced Cost of Operation
  - Reliable Service Delivery
- Air Security
  - Better conformance monitoring through earlier detection of aircraft state changes
  - Comprehensive surveillance picture for all users (CASP)

AOA-1 Strategy Shift

- ***Doesn't cost the airlines anything***
- ***Promotes maximum use of existing information***
- ***Reduces operational costs and improves efficiency***

Glad There Are
No Questions !

Back Up

Slides

Vetting / Staffing Completed

DoD

- JROC
- Mr. Pete Verga, Spec Asst for Home Land Defense
- Ms. Michelle Van Cleave, OSD (P)
- NORAD / NORTHCOM IPT
- PACOM

TSA

- Mr. Chuck Burke, Deputy Director, Aviation Policy
- Mr. Karl Shrum, Special Projects Officer

FAA

- Mr. Steve Brown ATS-1
- Mr. Bill Peacock AAT-1
- Mr. Steve Zaidman AAF-1
- Mr. Jim Washington ARS-1
- Mr. Mike Cirillo ATP-1
- Mr. Gregg Dvorak AOS-1

USSS

- Mr. Danny Spriggs, Deputy Director
- Mr. Nelson Garabito, Presidential Protective Service
- Mr. Frank Larkin, Special Agent IC, White House Security Branch

FBI

- Mr. John S. Pistole, Dep Asst Director, Counterterrorism Div
- Arthur M. Cummings, II, Section Chief, Counterterrorism Div
- Kevin L. Foust, Asst. Section Chief, Counterterrorism Div
- William W. Carter, Intel Research Spec, Counterterrorism Div

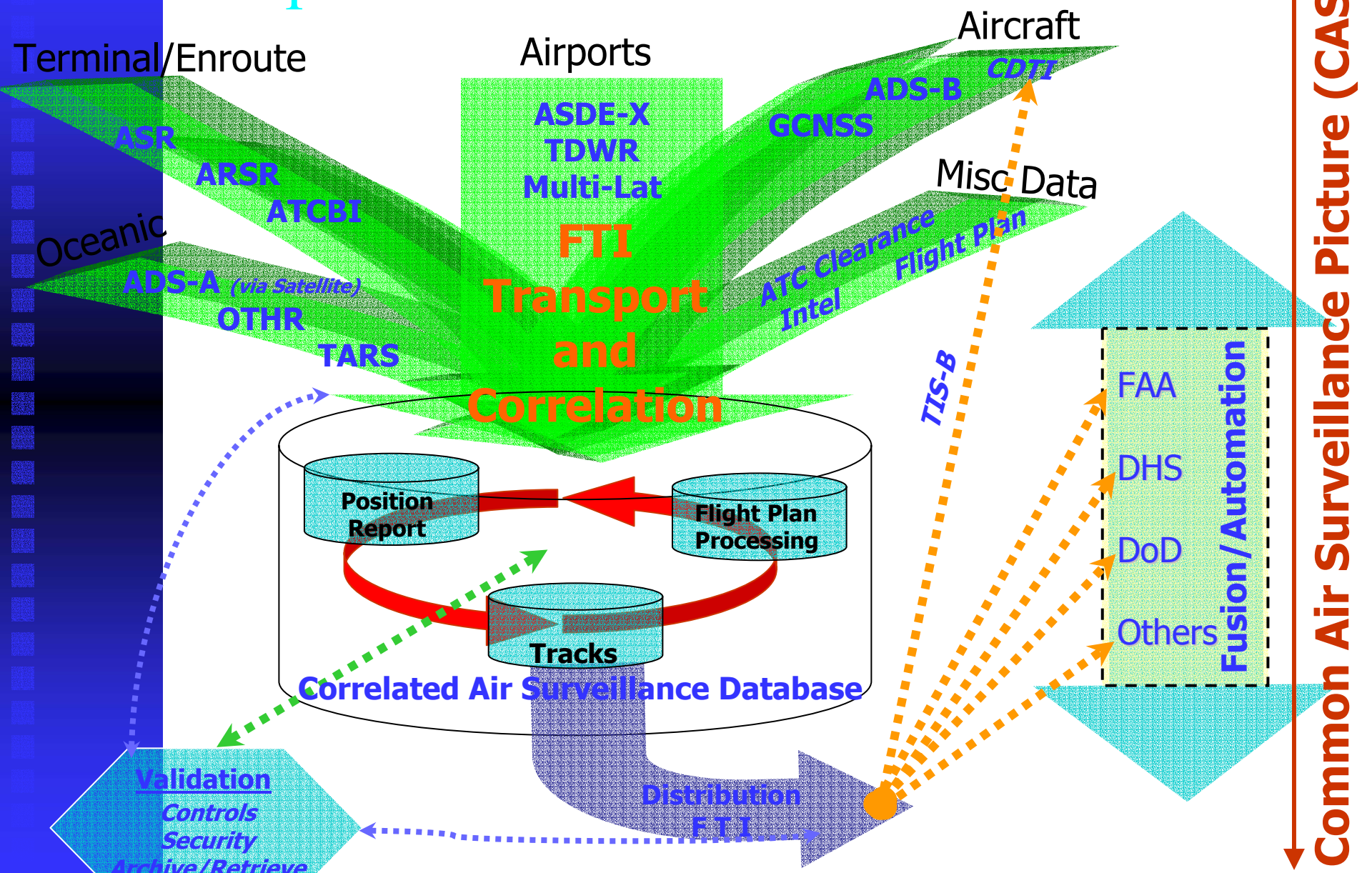
USCS

- Mr. Frank Figueroa, Deputy Assistant Commissioner, Office of Investigations
- Mr. Charles Stallworth, Executive Director, Air and Marine Interdiction Division (Falls under Office of Investigations)
- Mr. Doyle Raines, Deputy to Stallworth
- Mr. Tony Crowder, Director, C4I

USCG

- VADM Barrett, Vice CG USCG
- VADM Allen, CoS USCG
- RADM Pluta, Asst Commandant, Maritime Safety, Security & Environmental Protection
- RADM Venuto, Asst Commandant Ops
- RADM Johnson, Director, Ops Capabilities

SDN Operational View



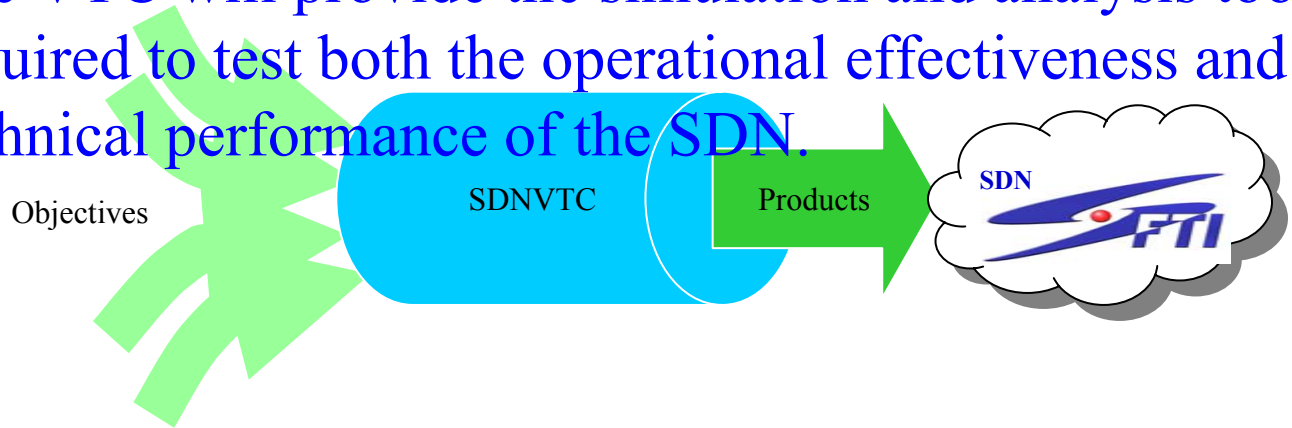
SDNVTC

Surveillance Data Network Virtual Test Capability

- The purpose of the VTC is to investigate ways to exploit SDN surveillance capabilities to provide user cost benefits in normal ATC operations.

- The VTC will provide the tools and processes required to simulate and validate the operational needs of the SDN users, as expressed in their Concepts of Operation.

- The VTC will provide the simulation and analysis tools required to test both the operational effectiveness and technical performance of the SDN.

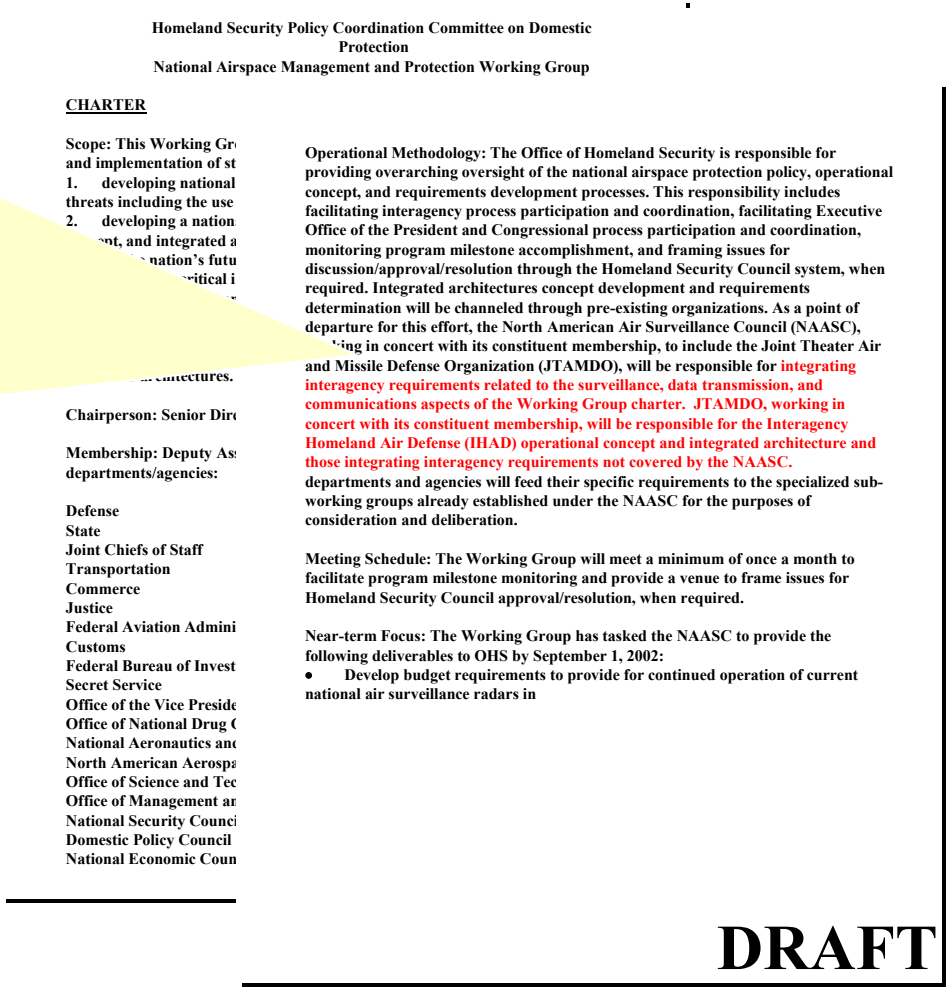


OHS Working Group Charter

Homeland Security Policy Coordination Committee on Domestic Protection

National Airspace Management and Protection Working Group

"The North American Air Surveillance Council (NAASC), working in concert with its constituent membership, to include the Joint Theater Air and Missile Defense Organization (JTAMDO), will be responsible for integrating interagency requirements related to the surveillance, data transmission, and communications aspects of the Working Group charter. JTAMDO, working in concert with its constituent membership, will be responsible for the Interagency Homeland Air Defense (IHAD) operational concept and integrated architecture and those integrating interagency requirements not covered by the NAASC."



Homeland Security Policy Coordination Committee on Domestic Protection
National Airspace Management and Protection Working Group

CHARTER

Scope: This Working Gr
and implementation of st
1. developing national
threats including the use
2. developing a nation
nt, and integrated a
nation's futu
ritical i
itectures.

Chairperson: Senior Dir

Membership: Deputy As
departments/agencies:

Defense
State
Joint Chiefs of Staff
Transportation
Commerce
Justice
Federal Aviation Admini
Customs
Federal Bureau of Invest
Secret Service
Office of the Vice Preside
Office of National Drug C
National Aeronautics and
North American Aerospa
Office of Science and Tec
Office of Management ar
National Security Counci
Domestic Policy Council
National Economic Coun

Operational Methodology: The Office of Homeland Security is responsible for providing overarching oversight of the national airspace protection policy, operational concept, and requirements development processes. This responsibility includes facilitating interagency process participation and coordination, facilitating Executive Office of the President and Congressional process participation and coordination, monitoring program milestone accomplishment, and framing issues for discussion/approval/resolution through the Homeland Security Council system, when required. Integrated architectures concept development and requirements determination will be channeled through pre-existing organizations. As a point of departure for this effort, the North American Air Surveillance Council (NAASC), ing in concert with its constituent membership, to include the Joint Theater Air and Missile Defense Organization (JTAMDO), will be responsible for integrating interagency requirements related to the surveillance, data transmission, and communications aspects of the Working Group charter. JTAMDO, working in concert with its constituent membership, will be responsible for the Interagency Homeland Air Defense (IHAD) operational concept and integrated architecture and those integrating interagency requirements not covered by the NAASC.
departments and agencies will feed their specific requirements to the specialized sub-working groups already established under the NAASC for the purposes of consideration and deliberation.

Meeting Schedule: The Working Group will meet a minimum of once a month to facilitate program milestone monitoring and provide a venue to frame issues for Homeland Security Council approval/resolution, when required.

Near-term Focus: The Working Group has tasked the NAASC to provide the following deliverables to OHS by September 1, 2002:
- Develop budget requirements to provide for continued operation of current national air surveillance radars in

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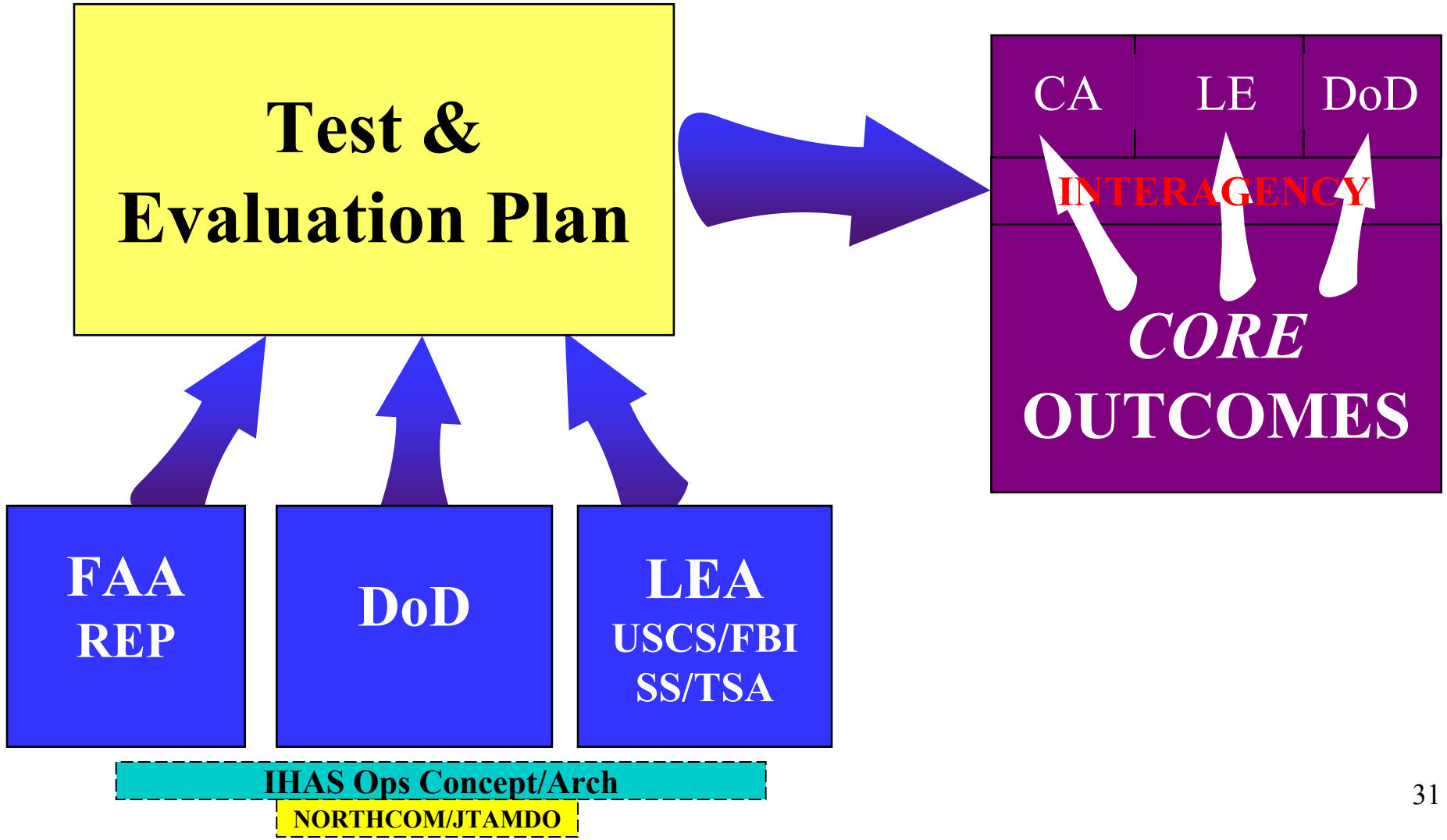
SDN/VTC Functional Concept



SDN Virtual Test Capability (VTC)

Capability Already Exists!